

# Industry Directory for On-Farm Biogas Recovery Systems



**ENERGY AND POLLUTION PREVENTION** 

# Industry Directory for On-Farm Biogas Recovery Systems

During the 1990s, the number of operating farm-scale digester systems increased by over 100 percent. The AgSTAR program is encouraged by this growth, especially given that the operational success rate of systems installed during the 1990s has been nearly 100 percent.

This increase in successful systems has brought about a number of commercially innovative approaches to gas use and digester development. For example, boilers for hot water applications and odor control at both dairy and swine farms have been implemented with great success, and their economic performance has been favorable. In addition, a number of centralized digester systems have been under development in key swine and dairy production regions. The success of these centralized systems will depend largely on the organizational aspects of farms, utilities, system owners and operators, and technology choices. We anticipate that some of these "first-time" systems will be installed and operational over the next year or so.

The AgSTAR program has developed this Directory to help farm owners identify appropriate consultants, project developers, energy services, equipment manufacturers and distributors, and commodity organizations. It provides company descriptions and contact information for each listed business. If you are in the planning stages of project development, we recommend that you use this Directory in combination with the AgSTAR Handbook (which is available on the AgSTAR website at http://www.epa.gov/agstar).

The Directory is not exhaustive, and we expect to update it periodically to include additional suppliers and project information. If you are interested in being included in the Directory, please call the AgSTAR Hotline at 1-800-95AgSTAR (1-800-952-4782) from 9:00 a.m to 5:00 p.m. Pacific Standard Time.

EPA does not guarantee the accuracy of the information which has been supplied by the listed organizations. Listing in this Directory does not imply endorsement of any listed organization. All users of this Directory must employ their own due diligence in making any decisions based on information found in this Directory.



# Consultants

# Brubaker Agronomic Consulting, Inc.

Michael Brubaker

4340 Oregon Pike Tel: 717/859-327 Email: mikeb@brubakerag.com # Years in Business: 21 #Employees:30 Ephrata PA 17522 Fax: 717/859-341 Web: www.brubakerag.com # Biogas Projects: 3 #Farm Projects: 3

#### **Experience:**

Brubaker Agronomic Consulting consults U.S. farmers in many areas within agriculture, and has three clients with biogas systems: two dairy farms and a swine farm.

#### **Commercial Engineering Corporation - Anergen Division**

Ashok Bendre

430 Lake Cook Road, Suite B

Tel: 847/236-090 Email: arbend@aol.co

# Years in Business: 15 # Employees:20

Deerfield IL 60015 Fax: 847/236-179 Web: www.anergencorp.co # Biogas Projects: 3 # Farm Projects: 0

#### **Experience:**

The Anergen division of Commercial Engineering performs feasibility assessments for farmers interested in installing biogas systems. Anergen submitted several proposals to design and develop biogas systems for farms.

## **Duke Engineering and Services**

David Johnson

400 S. Tryon Street, P.O. Box 1004 Tel: 704/373-338 Email: rfgreen@dukeengineering.co # Years in Business: 12 #Employees:300 Charlotte NC 28201 Fax: 704/382-766 Web: NA # Biogas Projects: 3 #Farm Projects: 1

#### **Experience:**

Duke engineering is testing a method to digest manure, and assisted with developing a digester for a poultry farm

#### E3 Ventures

Gary Suskauer

1140 Kildaire Farm Road, Suite 304 Tel: 919/469-373 Email: gsuskauer@e3ventures.co # Years in Business: 6 # Employees:5
Cary NC 27511 Fax: 919/469-365 Web: www.e3ventures.co # Biogas Projects: 0 # Farm Projects: 0

#### **Experience:**

E3 Ventures recently entered the renewable energy sector

#### **GeoPacific Lining**

William Wolfe

 1300 Dexter Ave., N. #20
 Tel:
 206/284-237
 Email:
 geopacific@cresmont.co
 # Years in Business:
 7
 # Employees:13

 Seattle
 WA
 98109
 Fax:
 206/283-706
 Web:
 NA
 # Biogas Projects:
 2
 # Farm Projects:
 0

#### **Experience:**

Geo Pacific Lining performs feasibility assessments and consults farms on implementing digester systems, and is in the design phase of developing digesters for three farms in the U.S.

#### GHD Inc.

Steve Dvorak

#### **Experience:**

GHD is currently working on its first biogas project for a farm.

#### **Granite Falls Ventures, Inc.**

Tim Discher

2525 Nevada Ave., Suite 21 Tel: 612/593-965 Email: enviro2@usinternet.co # Years in Business: NA # Employees:10
Golden Valley MN 55427 Fax: 612/593-968 Web: www.gfvi.co # Biogas Projects: 4 # Farm Projects: 0

#### **Experience:**

GFVI performs feasibility assessments for farmers interested in installing a biogas anaerobic digester system. GFVI is collaborating with a European company to develop digesters in the U.S. The European company has designed 11 biogas projects, and 7 farm projects for dairy and swine farms in Denmark.

#### **IGT**

J. Robert Paterek, Ph.D

1700 S. Mount Prospect Roa Tel: 847/768-072 Email: paterek@igt.org # Years in Business: #Employees:

Des Plaines IL 60016 Fax: 847/768-054 Web: http://www.igt.org # Biogas Projects: # Farm Projects:

#### **Experience:**

Energy and Environmental Research, Development and Education

#### **IGT**

Laurence M. Feder

1700 S. Mount Prospect Roa Tel: 847/768-052 Email: lanny\_feder@igt.org # Years in Business: #Employees:

Des Plaines IL 60016 Fax: 847/768-054 Web: http://www.igt.org # Biogas Projects: #Farm Projects:

#### **Experience:**

Energy and Environmental Research, Development and Education



#### **National Methane**

William J. Lingo, Sr.

905 Glendean Ave., Suite 8 Tel: 937/256-750 Email: bilingo@dma.org # Years in Business: 18 #Employees:4
Riverside OH 45431 Fax: 937/256-750 Web: NA # Biogas Projects: 0 # Farm Projects: 0

#### **Experience:**

National Methane provides complete farm evaluations and recommendations for incorporating biogas technology into a farm plan. National Methane has provided evaluations for 21 chicken farms (layers), 4 swine farms, and 2 dairy farms. National Methane writes grants for farmers to lower costs and increase the rate of return, and is in the process of writing grants for 4 farms to implement National Methane's patented design.

#### **Nelson and Associates**

D.O. "Swede" Nelson

76 Almendral Ave. Tel: 650/364-727 Email: swedenelson@msn.com # Years in Business: 18 # Employees:12
Atherton CA 94027 Fax: 650/367-036 Web: NA # Biogas Projects: 0 # Farm Projects: 0

#### **Experience:**

Nelson and Associates is a domestic and international consulting group specializing in the planning, technical study, implementation and financing of petroleum and environmental projects. The company recently affiliated with firms with extensive experience in biogas projects, mainly in NC and KS.

## **Omega-Alpha Recycling Systems**

Robert Hamburg

Route 1, Box 51 Tel: 304/655-866 Email: anomalous@wvadventures.net # Years in Business: 23 # Employees:4
Orma WV 25268 Fax: NA Web: NA # Biogas Projects: 7 # Farm Projects: 4

#### **Experience:**

Omega-Alpha Recycling Systems works on projects related to organic recycling and biogas systems integrated with organic farming and permaculture facilities. Omega-Alpha Recycling has designed 4 small-scale, ambient temperature digesters: 1) Arcadia Farm, a goat, chicken, and horse farm in Orma, WV with a Chinese style extended batch digester; 2) Urbanic Farm, a horse, cow, and chicken farm in Chloe, WV with a Chinese style extended batch digester; 3) Agriculture Research Farm, a swine farm in Orma, WV with a Chinese style extended batch digester; and 4) the Mandali School, a school with cattle, in Chorrak, Nepal, an Indian design Gobar Gas demonstratio project.



#### **Richard Chambers**

Richard Chambers

1102 Don Cubero Ave Tel: 505/820-757 Email: Rhcha@aol.com # Years in Business: 40 #Employees:1
Santa Fe NM 87501 Fax: 505/820-757 Web: # Biogas Projects: 0 # Farm Projects: 0

#### **Experience:**

Construction Project Administrator and Engineer

#### **Richmond Energy Associates**

Jeff Forward

#### **Experience:**

Richmond Energy Associates is a renewable energy company specializing in anaerobic digestion feasibility analysis.

#### Sustainable Energy Inc.

Mark Thomas

1155 N. State St., Suite 610 Tel: 360/647-280 Email: sei@sei-us.com # Years in Business: 2 # Employees:4

Bellingha WA 98225 Fax: 360/647-517 Web: www.sei-us.com # Biogas Projects: 2 # Farm Projects: 1

#### **Experience:**

SEI has six years of management experience in the compost industry, and can perform feasibility assessments for farmers interested in installing a biogas system.



## **The Dubara Compan**

Stephen Hoyt

1177 Route 9 Tel: 518/732-761 Email: steveh@albany.net # Years in Business: 2 # Employees:1
Castleton NY 12033 Fax: 518/732-761 Web: NA # Biogas Projects: 2 # Farm Projects: 0

#### **Experience:**

The Dubara Company is currently operating 3 pilot reactors for the Vermont Department of Public Service testing the rate of digesting whole dairy manure. The Dubara Company is hoping to increase the rate of digestion and reduce the size of digesters, and also to address ways to remove sediment and prevent accumulation.

#### VerdiTech

Ken Abercrombie

12749 East Heather Dr Tel: 559/297-737 Email: verditch@aol.com # Years in Business: 0 # Employees:2
Clovis CA 93611 Fax: 559/297-737 Web: NA # Biogas Projects: 0 # Farm Projects: 0

#### **Experience:**

VerdiTech consults, designs, and manages systems to convert livestock manure into energy. Also provides services to develop quality monitoring for effective field application and crop production.



# Developers

## A.O. Smith Engineered Storage Products Company

Dave Friederick

345 Harvestore Drive Tel: 815/756-155 Email: dfriederick@aosmith.co # Years in Business: 50 #Employees:143

DeKalb IL 60115 Fax: 815/756-165 Web: www.slurrystore.co # Biogas Projects: 53 #Farm Projects: 17

#### **Experience:**

A.O. Smith performs feasibility assessments, and designs and installs biogas systems. A.O. Smith has designed biogas systems for 7 farms in the U.S. and 10 farms in Europe. Examples include: 1) Huntington Dairy, a 600 cow dairy in Cooperstown, NY; and 2) University of Florida, a 500 cow dairy in Gainesville, FL.

#### **Agri Bio Systems**

Richard Vetter

2333 Tara Drive Tel: 847/888-785 Email: rvagribio@aol.com # Years in Business: 18 # Employees:NA Elgin IL 60123 Fax: 847/888-148 Web: NA # Biogas Projects: 7 # Farm Projects: 7

#### **Experience:**

Agri Bio Systems performs feasibility assessments, and designs and installs biogas systems in the U.S. and internationally. Examples of biogas systems in the U.S. include: 1) Lindstrom Farm: a 50 cow dairy farm in Welch, MN; 2) Leefer Farm, a 1000 cow beef confinement farm in Carbin Carlinville, IL; 3) Smith farm, a 70,000 broiler poultry farm in Princeton, NC; 4) Naser Farm, a 1,000 sow finishing swine farm in Sibley, IA; 5) Hamilton Farm, a 450 sow finishing farm and a 120,000 layers poultry farm in Iowa Falls, IA; 6) Huntington Dairy, a 300 cow dairy farm in Cooperstown, NY; and 7) Cushman Farm, a 600 cow dairy in Franklin, CT.

# Applied Technologies, Inc.

John F. Kouba

 16815 W. Wisconsin Ave.
 Tel:
 414/784-769
 Email:
 jfkouba@ati-ae.co
 # Years in Business:
 12
 # Employees:45

 Brookfield
 WI
 53005
 Fax:
 414/784-684
 Web:
 NA
 # Biogas Projects:
 25
 # Farm Projects:
 1

#### **Experience:**

Applied Technologies, Inc. has co-sponsored seminars on anaerobic treatment of agricultural and high strength wastes for the past 8 years, and designs its own anaerobic contact process. Applied Technologies, Inc. designed a complete mix digester for Maple Leaf Farms, a poultry farm in Franksville, WI.



#### **Environomics**

Richard Mattocks

5700 Arlington Ave., Suite 17 Tel: 718/884-674 Email: utter@compuserve.com # Years in Business: 20 #Employees:2
Riverdale NY 10471 Fax: 718/884-672 Web: http://ourworld.compuserve.com/homepages/utter # Biogas Projects: 17 # Farm Projects: 16

#### **Experience:**

Environomics has designed 15 farm-scale biogas projects. They include plug-flow digesters for 7 dairy facilities throughout the U.S., ranging in size from 30-1,000 cows. Depending on the farm, the biogas is used to generate electricity, and to fuel boiler systems. The remaining farm-scale projects include mixed digesters for 8 swine farms throughout the U.S. for farrow-to-finish farms, ranging in size from 1,000-3,000 sows. The swine farms use the biogas to generate electricity. In addition, Environomics is highly experienced in the following activities: permitting, utility negotiations, public relations, feasibility studies, and publications.

#### **Feldmann and Associates**

Terry Feldman

11191 Carolyn Court Tel: 309/699-696 Email: tlfeldmann@aol.com # Years in Business: 6 # Employees:2
East Peoria IL 61611 Fax: 309/699-696 Web: NA # Biogas Projects: 1 # Farm Projects: 1

#### **Experience:**

Feldmann and Associates collaborated with AgSTAR to design a complete mix digester for Apex Pork in Rio, IL, an AgSTAR demonstration farm. Feldmann is focused on advising farmers to increase production efficiency and improve manure handling methods.

## Fox Engineering Associates, Inc.

Dale Watson

1531 Airport Road Tel: 515/233-000 Email: dwatson@foxeng.co # Years in Business: 40 #Employees:30
Ames IA 50010 Fax: 515/233-010 Web: www.foxeng.co # Biogas Projects: 10 #Farm Projects: 2

#### **Experience:**

Fox Engineering specializes in environmental and civil engineering services for industrial, municipal, and agricultural sectors. Work involves dealing with water, wastewater, soil, and air media issues. Fox has designed a digester for Crawford Farm (Demonstration Project), a swine farm in Nevada, IA.



# Hadley and Bennett, Inc.

Spencer Bennett

P.O. Box 517 Tel: 603/428-385 Email: bennettfarm@conknet.com # Years in Business: NA # Employees:1
Henniker NH 03242 Fax: 603/428-385 Web: NA # Biogas Projects: 6 # Farm Projects: 6

#### **Experience:**

Haley and Bennett, Inc. designs and builds anaerobic digesters. Examples of projects include: 1) Hadley Farm, a dairy in Henniker, NH; 2) Foster Brothers, a dairy in Middlebury, VT; 3) Tait Farm, a veal farm in North Whitefield, ME; 4) Shugah Vale, a dairy in Claremont, NH; 5) Curtin Brothers, a dairy in Oneida, NY; and 6) Bruce Farm, a dairy in Oldensburg, NY.

#### **Lock Four**

Stacy Gettier

P.O. Box 474 Tel: 804/834-831 Email: swg@erols.com # Years in Business: 10 # Employees:1
Waverly VA 23890 Fax: NA Web: NA # Biogas Projects: 4 # Farm Projects: 4

#### **Experience:**

Lock Four performs feasibility assessments, and designs and installs biogas systems. Examples include: Barham Farm, a 1-4,000 sow farrow-to-wean farm in Zebulon, NC; 2) Apex Pork, an 8,600 head finishing swine farm in Rio, IL; 3) Boland Farm, a 2,000 head nursery swine farm in Williamsburg, IA; and 4) a 2,800 head farrow-to-feeding swine farm in South Boston. VA.

#### **Resource Conservation Management, Inc.**

Mark Moser

P.O. Box 4715 Tel: 510/658-446 Email: astro166@worldnet.att.net # Years in Business: 17 # Employees:2

Berkeley CA 94704 Fax: 510/658-272 Web: NA # Biogas Projects: 20 # Farm Projects: 20

#### **Experience:**

Resource Conservation Management has designed 20 farm-scale biogas projects. Examples include: 1) Apex Pork (for AgSTAR), a swine farm in Rio, IL with a covered, heated, mixed lagoon; 2) Freund Dairy (for AgSTAR), a dairy farm in East Canaan, CT with a plug flow digester; 3) AA Dairy (for AgSTAR), a dairy farm in Candor, NY; 4) Martin Hog Farm (for AgSTAR), a swine farm in South Boston, VA with a covered lagoon; 5) Barham Hog Farm (for AgSTAR), a swine farm in Zebulon, NC with a covered lagoon; 6) Craven Dairy, a dairy farm in Cloverdale, OR with a plug flow digester; 7) Cal Poly Dairy (for AgSTAR), a dairy farm in San Luis Obispo, CA with a covered lagoon; 8) Palmer Hog Farm, a swine farm in Yell County, AR with a covered lagoon; 9) Tohoku Farm, a swine farm in Aamori Prefecture, Japan with a mixed digester; and 10) Langerwerf Dairy, a dairy farm in Durham, CA with a plug flow digester.

# Sharp Energy, Inc.

Roy Sharp

 24684 Road 148
 Tel:
 559/688-205
 Email:
 rsharp6368@aol.co
 # Years in Business:
 18
 # Employees:2

 Tulare
 CA
 93274
 Fax:
 559/688-111
 Web:
 NA
 # Biogas Projects:
 12
 # Farm Projects:
 10

#### **Experience:**

Sharp Energy, Inc. consults, designs, and sets up the most effective and efficient waste management and energy production systems. Sharp Energy developed systems for the following farms: 1) Royal Farms, a 16,000 head swine farm in Tulare, CA; 2) Sharp Ranch, a 5,000 head swine farm in Tulare, CA; 3) Sharp Enterprises, an 8,000 head swine farm in Caruthers, CA; 4) Petrorio Farm, a 3,000 head swine farm in Skopje, Macedonia. Sharp Energy designed the cover for the following farms: Cal Poly San Luis Obispo (an AgSTAR Demonstration Farm), a 300 cow dairy in San Luis Obispo, CA; and Laurenco Dairy, a 1,200 cow dairy in Tulare, CA.

# Manufacturers/Distributers of Covers

## **Engineered Textile Products**

Carter Damp

P.O. Box 7474

Tel: 800/222-800 Email: cdamp2@aol.com # Years in Business: NA #Employees:47

Mobile AL 36670 Fax: 888/222-827 Web: www.etpinfo.com # Biogas Projects: 5 #Farm Projects: 2

#### **Experience:**

Engineered Textile Products, Inc. manufactures and distributes covers. Engineered Textile Products, Inc. manufactured the covers for a swine and a dairy farm: Martin's Farm, a swine farm with a covered lagoon in South Boston, VA; and Palmers Farm, a swine farm with a covered lagoon in Pettite Jean Mt., AR.

#### **Environmental Fabrics, Inc.**

Ray E. Pickel

85 Pascon Court Tel: 803/551-570 Email: NA # Years in Business: 6 # Employees:30 Coaston SC 29053 Fax: 803/551-570 Web: NA # Biogas Projects: 17 # Farm Projects: 5

#### **Experience:**

Environmental Fabrics Inc. has manufactured covers for five farms: 1) Dowell Ramsey Farm, a swine farm in Nash County, NC; 2) Gold 'N Plump Poultry, a poultry farm in Cold Springs, MN; 3) Pelican Rapids, a farm in Pelican Rapids, MN; 4) Apex Pork, a swine farm in Rio, IL; and 5) Barham Farms, a swine farm in Zebulon, NC.

## **GeoPacific Lining**

William Wolfe

1300 Dexter Ave., N. #20

Tel: 206/284-237 Email: geopacific@cresmont.co # Years in Business: 7 # Employees:13

Seattle WA 98109 Fax: 206/283-706 Web: NA # Biogas Projects: 2 # Farm Projects: 0

## **Experience:**

Geo Pacific Lining manufactures and distributes covers.

#### **Reef Industries**

Lynn Ciolli

Houston TX 77275 Fax: 713/507-429 Web: www.reefindustries.co # Biogas Projects: NA # Farm Projects: NA

#### **Experience:**

Reef Industries manufactures and distributes covers for biogas systems.

#### Sharp Energy, Inc.

Roy Sharp

 24684 Road 148
 Tel:
 559/688-205
 Email:
 rsharp6368@aol.co
 # Years in Business:
 18
 # Employees:2

 Tulare
 CA
 93274
 Fax:
 559/688-111
 Web:
 NA
 # Biogas Projects:
 12
 # Farm Projects:
 10

#### **Experience:**

Sharp Energy, Inc. designs and distributes covers for biogas systems.

# Manufacturers/Distributers of Engines

#### **CEC Consultants**

John Puskar

6907 Brookpark Rd.

Tel: 216/749-299 Email: cec@apk.net # Years in Business: 15 # Employees:16
Cleveland OH 44129 Fax: 216/398-840 Web: www.cec-consultants.com # Biogas Projects: 4 # Farm Projects: 2

#### **Experience:**

CEC is a distributor for Jasper's alternative fuel automotive derivative packaged engine systems. CEC distributed the engine for two-farm scale biogas projects.

#### **Reflective Energies**

Edan Prabhu

22922 Tiagua Tel: 949/380-489 Email: edanprabhu@msn.co # Years in Business: 3 # Employees:2

Mission Viejo CA 92692 Fax: 949/380-840 Web: NA # Biogas Projects: 0 # Farm Projects: 0

#### **Experience:**

Reflective Energies is developing a Flex-Microturbine (TM) that will improve the conversion of biogas to electricity. The technology will be available commercially in two years.

# Manufacturers/Distributers of Tanks

# A. O. Smith Engineered Storage Products Company

Dave Friederick

345 Harvestore Dr. Tel: 815/756-155 Email: dfriederick@aosmith.co # Years in Business: 50 #Employees:143

Dekalb IL 60115 Fax: 815/756-165 Web: www.slurrystore.co # Biogas Projects: 53 #Farm Projects: 17

#### **Experience:**

A.O. Smith performs feasibility assessments, and designs and installs biogas systems. A.O. Smith has designed biogas systems for 7 farms in the U.S. and 10 farms in Europe. Examples include: 1) Huntington Dairy, a 600 cow dairy in Cooperstown, NY; and 2) University of Florida, a 500 cow dairy in Gainesville, FL.

# Other: Commodity Organizations

# **Dairy Quality Assurance Center**

Keith Carlson

801 Shakespeare Ave. Tel: 515/838-279 Email: dga@netins.net # Years in Business: 8 # Employees:3
Stratford IA 50249 Fax: 515/838-278 Web: www.dqacenter.org # Biogas Projects: 0 # Farm Projects: 0

#### **Experience:**

The Dairy Quality Assurance Center provides national publicity to dairy farmers.

#### **Missouri Pork Producers Association**

Don Nikodi

6235 W. Cunningham Drive Tel: 573/445-837 Email: pork@mppa.net # Years in Business: 45 # Employees:7
Columbia MO 65202 Fax: 573/446-239 Web: www.mppa.net # Biogas Projects: 0 # Farm Projects: 0

#### **Experience:**

The Missouri Pork Producers Association is an organization focused on agricultural commodities.

# Other: General Energy Services

# **Vermont Energy Investment Corporation**

Paul Scheckel

244 South Champlain St
Tel: 802/456-709 Email: scheckel@sover.net # Years in Business: 12 #Employees:27
Burlington VT 5401 Fax: 802/658-164 Web: www.homepages.together.net/~veic/ # Biogas Projects: 0 # Farm Projects: 0

#### **Experience:**

Vermont Energy Investment Corp. (VEIC) focuses on financing programs related to energy efficiency. VEIC is looking for ways to participate with the state of Vermont's project to initiate a farm-based methane digester program.

